9

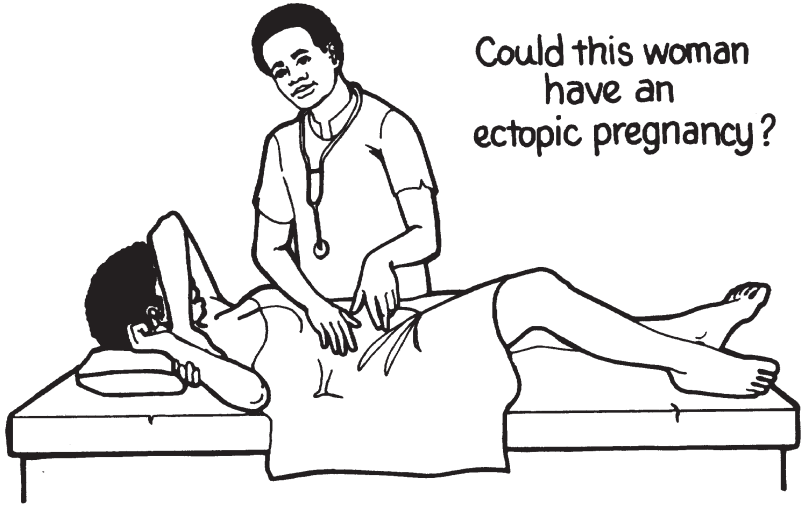
Pregnancy Diagnosis

Tazana had been married more than a year and still had not become pregnant. Always, it was "Tazana, when will you bring us grandchildren?" or "Tazana, have you no fruit to bear?" A few months ago, her monthly bleeding came late and raised her hopes falsely. Today, she was nearly 2 weeks overdue for her period. She felt tired and nauseated. Tazana hoped the doctor at the clinic could tell her whether she was pregnant—or whether she was sick, late, and still to await her turn at motherhood.

"Is my patient pregnant now?" You will ask yourself this question many times in your work as a family planning clinician. Sometimes the clinical situation is confusing. It is especially important to remember the possibility of pregnancy when evaluating a woman who has undergone surgical sterilization and has an abnormal menstrual pattern or possible pregnancy symptoms. When pregnancy occurs after surgical sterilization, the risk of ectopic (tubal) pregnancy is high.[6] Skills for diagnosing early pregnancy are also essential so that your patient can begin pregnancy precautions and prenatal care during the first few weeks of her pregnancy, when the fetus is most vulnerable. You should have the following skills and knowledge:

- You should be able to diagnose ectopic pregnancy early. Detecting ectopic pregnancy before rupture could save your patient's life and increase the chance that her future fertility can be preserved.
- You should know how to ensure that your patients with an unintentional pregnancy get adequate counseling and to allow them to make a well-considered decision before proceeding on a course of action.
- You should know how to avoid inserting an intrauterine device (IUD) in a patient who is pregnant and not to use medications that are contraindicated during pregnancy.
- You should be able to evaluate a woman who has missed one or more periods for causes of amenorrhea and to detect problems such as retained pregnancy tissue or continuing pregnancy after a spontaneous or induced abortion.

Figure 9:1 Detecting an ectopic pregnancy before it ruptures can save a woman's life



Careful evaluation to detect pregnancy is especially important before inserting an IUD because of the risk of septic spontaneous abortion. It is also important before any medical treatment, such as extensive x-rays or toxic medication, that might cause injury to a developing fetus. It is prudent to check carefully for pregnancy before performing surgical sterilization or initiating long-term hormonal methods such as implants or injectables.

CLINICAL EVALUATION IN PREGNANCY

Based on findings from a good medical history and physical examination, you can be quite certain about diagnosing pregnancy in most cases. If the pregnancy is not normal or you are not certain, a pregnancy test may be helpful. Otherwise, repeating your clinical evaluation and examination 1 or 2 weeks later usually makes the diagnosis clear. Pregnancy diagnosis has the following goals:

- To determine whether the patient is pregnant
- To estimate the duration of pregnancy in weeks as accurately as possible
- To detect any sign of ectopic pregnancy or abnormal pregnancy

Steps in Clinical Evaluation

The very first exam gives the most reliable estimate of pregnancy duration. Try to be exact. This information may be important later if a decision about inducing labor is necessary. Write down the dates of the patient's last few menstrual periods and record her current pregnancy symptoms, the date they began, and the date of your examination. Carefully evaluate and record the size of the uterus (in weeks) and the estimated date of confinement (EDC) after the first exam. Use both symptom history and your exam to determine EDC.

Symptoms and history

Most patients first notice symptoms of pregnancy about 4 weeks after the last menstrual period. The first sign is usually sensitivity of the nipples, which may soon be followed by breast tenderness. These symptoms can begin just before the menstrual period is due or during the first week or two after the period is missed. During the first 4 to 12 weeks of pregnancy, other signs may appear:

Missed periods	Weight gain
Breast tenderness or swelling	Mood changes
Nausea (morning sickness)	Fatigue
Urinary frequency	Change in appetite or eating habits
Feeling warmer than usual	Change in dreams (more vivid)

Symptoms of nausea, breast tenderness, and fatigue are usually most intense between 6 and 10 weeks of pregnancy, when pregnancy hormone levels are at their peak. By the 12th week, these symptoms usually subside, and new signs appear:[2]

Increase in breast size
Blotches of pigment on face (pregnancy mask; chloasma)
Protruding lower abdomen
Darkening of nipples
Vaginal discharge (wet mucus)
Fluttering fetal movements (15 to 16 wks)
Fetal movements and kicks (18 to 20 wks)
Swelling and redness of gums
Leg cramps

Physical examination

The first signs of pregnancy include a slight softness of the uterus and a sense of increased flexibility at the junction between the cervix, which remains more firm, and the body of the uterus, which is softer than normal. These signs are subtle and may give a hint of pregnancy as early as 4 or 5 weeks after the last menstrual period. Often, one ovary is slightly tender and prominent because of the active corpus

luteum cyst that is supplying hormones for the first few weeks of pregnancy. The woman's breasts may also seem slightly swollen and may be more tender than usual on examination.

By 6 weeks of pregnancy, the uterus should definitely feel soft and just barely enlarged, so you can be quite certain about the diagnosis of pregnancy. By 8 weeks, the uterus has enlarged to the size of a small plum and begins to have a definitely rounded shape; the body of the uterus feels like a bulge that begins at the junction with the cervix. You may also notice that the woman's thyroid gland is more prominent than usual and that her nipples are beginning to darken or become more prominent.

Verifying that a Patient is Not Pregnant

There is no way to be absolutely certain a patient is not pregnant. Even a Sensitive Urine Test Kit cannot detect early pregnancy until implantation is completed about 7 days after ovulation, and the patient's history can be misleading. Even visible vaginal bleeding does not provide infallible assurance: bleeding can occur during early pregnancy and may even signal pregnancy problems such as threatened abortion. Still, it is possible to be reasonably sure about pregnancy if you take a careful history and perform an appropriate exam. Pregnancy is *not* likely under the following circumstances:

1. The woman has had a regular pattern of monthly menstrual periods and meets one of the following conditions:
    - She has not had sexual intercourse since her last menstrual period.
    - She has used an effective contraceptive method correctly and consistently.
    - She has had a normal menstrual period within the last 7 days.
2. The woman has been pregnant and meets one of the following conditions:
    - She had an abortion within the last 7 days.
    - She delivered a full-term pregnancy within the last 4 weeks.

3. The woman is fully breastfeeding and meets one of the following conditions:
    - She delivered within the last 8 weeks.
    - She delivered within the last 6 months and has not yet resumed menstrual bleeding.

Bleeding during the first 2 months after delivery is considered postpartum bleeding, and is normal. After 2 months, when bleeding resumes it indicates that the interval of lactational amenorrhea has ended and potentially fertile menstrual cycles are returning. Lactational amenorrhea provides effective contraceptive protection during the first 6 months if the woman breastfeeds fully[5] (the infant receives breast milk exclusively or almost exclusively, day and night, with only occasional tastes of water or food). A woman who does not breastfeed after delivery may resume fertile menstrual cycles as soon as 4 to 6 weeks after delivery. (See Chapter 12 on Lactation and Postpartum Contraception.)

Evaluating the possibility of pregnancy in a woman who does not have regular menstrual cycles can be confusing. If the patient's history is not clear or if you are not certain about how reliable the information is, it may be prudent to wait so that you can document the events of the next menstrual cycle. An exam at the time of ovulation can verify ovulatory mucus. If a microscope is available, you can check for mucus that dries in a crystal fern pattern (called spinnbarkeit). The next normal menstrual period should begin 13 or 14 days later. If it begins on the expected date, you can be quite certain the woman is not pregnant. Be sure the woman uses an effective contraceptive method or is able to avoid intercourse during this interval. Alternatively, a Sensitive Urine Test Kit can be used to help provide reassurance.

Managing Pregnancy Problems

Sometimes it is not possible to reach a definite diagnosis during the first exam. The most common reason for uncertainty is very early pregnancy—an exam 1 week later, when signs and symptoms are clearer, may solve the problem. Abnormal pregnancies can also cause confusing signs and exam findings. The following discussion presents some of the more common or serious problems.

Bleeding in Pregnancy

Bleeding in early pregnancy is common. Sometimes bleeding is the first sign of a problem, but it can also occur in a completely normal pregnancy. A woman who has a normal pregnancy may report an episode of bleeding that seems like a normal menstrual period, or she may have had bleeding that is lighter or shorter than normal or at not quite the correct time. In this situation, the woman's uterus will be about 4 weeks larger than you would expect from her last bleeding date. Other causes for a larger than expected uterus are shown in Table 9:1.

Table 9:1 Reasons for a difference between size of the uterus and period dates

Uterus smaller than expected	**Uterus larger than expected**
Fertilization later than dates suggest (ovulation was delayed)	Fertilization earlier than dates suggest (pregnancy began before last "period")
Spontaneous abortion: threatened	Uterine leiomyomata (fibroids)
Incomplete, or missed abortion	Twin pregnancy
Incomplete abortion procedure	Abnormal uterus (such as bicornuate)
Ectopic pregnancy	Molar (hydatidiform) pregnancy

Bleeding can also be a sign of problems such as ectopic pregnancy or threatened spontaneous abortion (miscarriage). In these situations, the uterus is usually smaller than you would expect from the date of the woman's last period. The bleeding pattern with both these problems tends to be more persistent than the "false period" bleeding in normal pregnancy.

Ectopic pregnancy

Of all the pregnancy problems, ectopic pregnancy is the most important to keep in mind, because emergency treatment may be needed. Internal hemorrhage from ectopic pregnancy is a leading cause of maternal death.

Vaginal bleeding associated with ectopic pregnancy may not be very heavy and may be intermittent. The woman may have pregnancy symptoms such as breast tenderness or nausea, but these tend to be less intense than during a normal pregnancy, and she may have no clear symptoms at all. She may also have abdominal pain, especially if the pregnancy has progressed to 6 weeks or more.

Pain may be one-sided, or it may be more generalized in the lower abdomen; once pain has started, it tends to be persistent and does not usually have the crampy, intermittent pattern that is common with uterine cramps or contractions caused by spontaneous abortion. The uterus is likely to be smaller than last period dates would suggest, and there may be tenderness in the area of the fallopian tube during exam. In some cases, the ectopic pregnancy may be palpable as a mass in the area of the fallopian tube or ovary.

Table 9:2 Risk factors for ectopic pregnancy

History of prior ectopic pregnancy
History of prior pelvic inflammatory disease (PID)
History of gonorrhea or chlamydia
History of appendicitis
History of prior abdominal surgery or pelvic surgery
Bleeding or spotting during early pregnancy
Uterus smaller or firmer than last menstrual period date suggests
Became pregnant while using an intrauterine devices (IUD), progestin-only pills, or progestin implants
Became pregnant after tubal sterilization
Became pregnant despite using emergency postcoital pills
Abdominal pain or tenderness on one side or throughout lower abdomen

As the pregnancy progresses to 7 weeks of gestation or more, internal bleeding or rupture becomes more and more likely. Internal bleeding causes severe pain, with abdominal muscle guarding and rebound tenderness when the abdomen is palpated. As blood inside the abdominal cavity is irritating to the bowel, bowel sounds may be

diminished or absent, and vomiting may occur. Irritation of the diaphragm may also cause shoulder pain. Internal hemorrhage also causes hypotension and a drop in blood count, and it can lead rapidly to death.

Diagnosing an ectopic pregnancy early is tricky. Early suspicion is very important. There may be few, if any, definite signs of pregnancy,[2] and a slide pregnancy test (2-minute agglutination test) is likely to be negative,[3] because the pregnancy hormone levels are lower than normal in most cases of ectopic pregnancy. Be alert, especially if the woman has one or more risk factors for ectopic pregnancy (see Table 9:2). If ectopic pregnancy is a possibility, make sure the woman understands the danger signs shown in Table 9:3. Frequent, careful follow-up, with daily exams, may be needed until the diagnosis is clear. If the woman has symptoms that strongly suggest ectopic pregnancy, every effort should be made to arrange for further evaluation. Culdocentesis, to aspirate fluid from the abdominal cul-de-sac, may show that internal abdominal bleeding is occurring. If available, a sensitive pregnancy test and ultrasound evaluation may be helpful. Signs like hypotension or a dropping blood count, however, mean there is no time for delay; immediate surgery can be lifesaving.

Table 9:3 Early pregnancy danger signs

See your clinician immediately if you develop any of these signs!
Possible Ectopic Pregnancy
• Sudden intense pain, persistent pain, or cramping in the lower abdomen, usually beginning on only one side or the other
• Irregular bleeding or spotting with abdominal pain when period is late or after an abnormally light period
• Fainting or dizziness persisting more than a few seconds, which may be a sign of internal bleeding (internal bleeding is not always associated with vaginal bleeding)
Possible Miscarriage
• Last period was late and the bleeding is now heavy, possibly with clots or clumps of tissue. Cramping is more severe than usual
• Period is prolonged and heavy: 5 to 7 days of heaviest bleeding
• Abdominal pain or fever

ABORTION

Bleeding associated with a spontaneous abortion may be heavy with clots; the woman may have cramping. The cervix may appear partly dilated. In some cases, clots and tissue visibly protrude from the cervical os. Bleeding can be heavy enough to cause anemia. Immediate referral for surgery (vacuum aspiration) may be needed to remove remaining pregnancy tissue and stop hemorrhage. Because the risk of serious infection is high with incomplete abortion, if you suspect retained tissue, it would be wise to perform a vacuum aspiration of the uterine contents. There may be retained tissue after incomplete spontaneous abortion or after an attempted abortion procedure. The woman with retained tissue is likely to have persistent bleeding and cramping, and she may develop signs of infection such as severe uterine tenderness, increasing abdominal pain, fever, and malaise. The vaginal secretions and blood may appear cloudy and abnormal, with a slightly sweet or foul odor. Immediate, intensive treatment for infection and vacuum aspiration are necessary when infection is suspected.[4] Be especially careful if there is any question of trauma or you suspect that an abortion procedure may have been attempted.

When the spontaneous abortion is complete, uterine bleeding subsides to a light flow and cramping stops, usually within a few hours. Pregnancy symptoms also subside promptly, and the uterus feels firm and non-tender during the pelvic exam. If the woman has no further bleeding and cramping episodes, feels well, and has no fever, she may not require any treatment. Schedule a follow-up exam after a few days to verify that the uterus is returning to normal size.

Other confusing situations

A missed abortion can present confusing signs and symptoms.[4] If the fetus stops growing, the uterus will be smaller than the woman's period dates suggest it should be. On a follow-up exam, the uterus will not have grown. If ultrasound or quantitative blood pregnancy tests are available, it may be possible to make a definite diagnosis. Otherwise, it may be quite difficult to be certain about what is happening. It is possible that a non-viable pregnancy could remain in place for weeks or even months before a spontaneous abortion begins.

If the woman's uterus is larger than menstrual dates suggest, consider the possibility of a twin pregnancy, a uterine leiomyomata (fibroids), or a uterine abnormality such as bicornuate (two-horn) uterus. If the rate of growth is very rapid and significantly larger than it should be, consider trophoblastic disease (molar or hydatidiform pregnancy). As pregnancy hormone levels are very high with trophoblastic disease, a woman with this disorder is also likely to have pregnancy symptoms, such as nausea, that are more intense than average. Bleeding can also occur with trophoblastic disease.

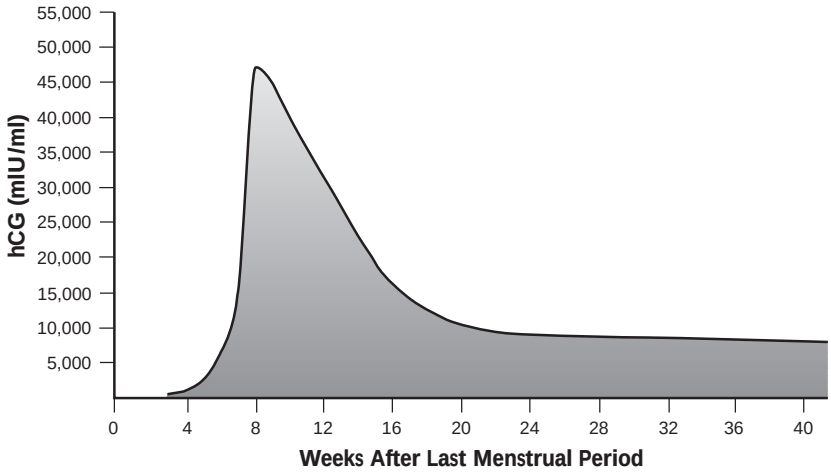
USING PREGNANCY TESTS

Pregnancy tests detect human chorionic gonadotropin (hCG) in a pregnant woman's urine or serum. This hormone is produced by placenta cells and first appears at very low levels soon after implantation, which occurs about 7 days after ovulation. hCG production rapidly increases, doubling approximately every 2 days. When the woman's first missed period is due, the serum level of hCG has reached 50 to 250 mIU/ml and can be detected by sensitive pregnancy tests. When she is 6 weeks pregnant, the level is high enough (several thousand mIU) to be detected by all commonly used pregnancy tests.

Pregnancy hormone levels peak at 8 to 10 weeks of pregnancy, then decline to a lower, steady level until the end of pregnancy (see Figure 9:2). This explains why symptoms caused by hCG, such as nausea and fatigue, are usually most intense during the second month of pregnancy.

Pregnancy hormone production is often abnormally low in ectopic pregnancy and in spontaneous abortion. In these situations, a slide pregnancy test (2-minute agglutination test) is likely to be negative even though the woman is pregnant. The hormone level is simply too low to detect unless a sensitive pregnancy test is available. Abnormally high hormone levels can be caused by twin pregnancy and trophoblastic (molar) pregnancy.

Figure 9:2 hCG levels during normal pregnancy



Source: Braunstein et al. (1976) with permission.

After pregnancy, the source of hormone production in the placenta is gone, and hormone in the bloodstream is gradually cleared. Because the level will have dropped to less than 50 mIU/ml 2 weeks after a full-term pregnancy, even a sensitive pregnancy test will no longer be positive at that time. When abortion occurs during the first 3 months of pregnancy, however, the starting level of hCG is very high. In this case, the level may still be high enough 2 weeks later to cause the pregnancy test to remain positive. Even a sensitive test should be negative, however, within about 40 days or so after a first-trimester abortion.

How Pregnancy Tests Work

There are several different kinds of pregnancy tests. Because they differ in sensitivity and design, interpreting positive and negative results will not be the same for all tests.

Slide Pregnancy Test (2-minute agglutination test)

This test can detect pregnancy when the hCG hormone level is 1,500 mIU/ml or higher, which occurs at about 6 weeks of pregnancy. Slide tests involve mixing a drop of the patient's urine with a drop of test solution that contains antibody. If the patient's urine contains hCG hormone, it binds with the anti-hCG antibody in the test solution. Binding of the test antibody prevents clumping (agglutination) of latex particles in a second test solution, which is poured onto a slide. If the woman is pregnant, the second solution does not clump. If clumping occurs, it means the test is negative. (Note: some slide tests work by direct clumping, where the results are reversed; be sure to read the directions with your kit carefully before performing a test.)

Incorrect results can occur if the woman has protein in her urine or abnormally high levels of certain other hormones. These include luteinizing hormone (LH), which is high at ovulation, thyroid stimulating hormone (TSH), which is elevated because of hypothyroidism, or follicle stimulating hormone (FSH), which is elevated after menopause. Because these hormones can cross-react with antibodies in the slide-test solution, the test can show a positive result even though the woman is not pregnant. On the other hand, certain medications, as well as urine that is too dilute, can cause a negative test result even though the woman is pregnant. The test is most likely to be positive if the urine used is the first the woman voids in the morning.

Slide agglutination tests are easy to store and use and are relatively inexpensive. The information they provide, however, does not add much to clinical management because a clinical history and a physical exam can also provide an accurate diagnosis by the 6th week of a normal pregnancy. Because slide agglutination tests cannot detect a low hormone level, this test is not reliable in diagnosing ectopic pregnancy and is not helpful in verifying pregnancy prior to IUD insertion or other medical treatment that should be avoided in pregnancy.

Sensitive Urine Pregnancy Test Kits

These tests can detect pregnancy when the hCG level is 50 mIU/ml or higher, which occurs within about 10 days after ovulation (some kits are even more sensitive). Sensitive kits use two antibodies to link hCG hormone in the woman's urine to an enzyme that changes color.

Sensitive kits are easy to use, but they are more expensive than slide tests and not as easy to store. They are reliable, however, for diagnosing ectopic pregnancy and for verifying that a woman is not pregnant prior to biopsy, x-ray, IUD insertion, or medical treatment that should be avoided in pregnancy.

False results are not common with sensitive urine pregnancy test kits, and cross-reaction with other hormones is not a problem.

Intermediate Sensitivity Tube Tests

Tube tests based on agglutination that are similar to the slide test are available to detect hCG levels of about 200 to 1000 mIU/ml. They are somewhat more expensive than slide agglutination tests but not as easy to use, and they may require more time to perform. Depending on availability and cost, however, tube tests may be a useful alternative to the Sensitive Urine Test Kits described above, but not quite as sensitive.

Blood Pregnancy Tests

A quantitative blood (serum) test can be used to measure the exact level of hCG; this test can accurately detect levels of hCG as low as 5 mIU/ml. Called Quantitative Beta-hCG assay, this test can help identify a non-viable pregnancy such as missed abortion or trophoblastic (molar) pregnancy. Sequential hCG levels may also help diagnose ectopic pregnancy.

Quantitative Beta-hCG assays, like radioimmunoassays and radioreceptorassays, require sophisticated laboratory facilities and do not provide immediate results. When a simple yes or no (positive or negative) answer is the goal and Sensitive Urine Kits or Tube Tests are available, more costly blood tests do not have any clinical advantages.

Priority Situations for Pregnancy Testing

In most cases, pregnancy test results do not make a crucial difference in clinical management. There are some situations, however, when having a pregnancy test available can be very helpful:

1. **To distinguish between pelvic infection and ectopic pregnancy.** The early symptoms of a pelvic infection and an ectopic pregnancy can be very similar: abnormal bleeding, pelvic and abdominal pain, abdominal tenderness and guarding, and uterine and adnexal tenderness. As the problem progresses, signs of internal hemorrhage that indicate ectopic pregnancy, or significant fever and sepsis that indicate an infection is present are likely to develop. Making the correct diagnosis as soon as possible may be a matter of life and death. Having a Sensitive Urine Test Kit available to diagnose ectopic pregnancy quickly and early could save a woman's life.
2. **To avoid unnecessary vacuum aspiration surgery.** Symptoms of incomplete abortion can be similar to symptoms of early pelvic infection or of spontaneous degeneration of a uterine leiomyoma (fibroid). If the woman has not passed recognizable tissue and if pregnancy has not been diagnosed prior to the onset of signs associated with a spontaneous abortion, distinguishing incomplete abortion from these problems may be tricky. If a Sensitive Urine Test Kit result is negative, incomplete abortion is not likely and vacuum aspiration surgery can be avoided.
3. **To confirm pregnancy problems.** Pregnancy testing may be helpful when a patient is referred for an evaluation of rare pregnancy problems. A quantitative Beta-hCG level, or two quantitative Beta-hCG tests obtained several days apart, can confirm diagnosis of trophoblastic (molar) pregnancy or an abnormal or non-viable pregnancy. Alternatively, an ultrasound evaluation can be used to help diagnose rare problems.
4. **To avoid unsafe or unneeded abortion surgery.** Routinely performing a Slide Urine Test (2-minute agglutination) before planned abortion is reasonable. A negative result

shows that the pregnancy hormone level is below 1500 mIU/ml, which means that the woman is either not pregnant or has been pregnant for less than 6 weeks. If the woman is not pregnant, an unnecessary procedure is avoided.

Avoiding Pregnancy Test Interpretation Errors

Sometimes, the results of a pregnancy test do not agree with other clinical signs:

1. **Any test can be wrong**. Laboratory error is always possible. Specimens could be mixed up, or there could be a problem in performing the test. It is essential to follow kit instructions precisely and time the steps carefully. Be sure to follow recommendations for storage; respect kit expiration dates.
2. **Know the test being used**. Interpreting results depends on understanding both the sensitivity of the test and what it will and will not detect.
3. **False results are common with slide agglutination tests**. A slide test is likely to be negative, even though the woman is pregnant, if the test is performed either too early or too late (after about 16 to 20 weeks, when the hCG hormone level has dropped). Results can also be negative with an ectopic pregnancy, threatened or missed abortion, or when the woman is pregnant but her urine is too dilute. Protein or blood in the urine could cause a positive test when the woman is not pregnant, as could a cross reaction with thyroid or menopause hormones.
4. **False results are not common with Sensitive Urine Test Kits**. A false result could occur if this sensitive test is performed incorrectly. For example, there could be excessive rinsing or the person performing the test could have red-green color blindness. Unusual medical problems such as severe kidney disease or cancer can also cause a false result.

COUNSELING AND PATIENT INSTRUCTIONS FOR OPTIMAL PREGNANCY

Often, a visit for diagnosing pregnancy provides an important opportunity for patient education and family planning counseling. If the patient is pregnant, precautions for pregnancy can be reviewed and arrangements made for prenatal care. The importance of diet, including adequate intake of folic acid (0.4 mg daily) and calcium (at least 1,500 mg daily), needs to be stressed, as well as the importance of avoiding alcohol[6] and other potentially toxic exposures. If the patient is not pregnant but would like to be, she may need information to maximize her chance for fertility. Because she is not pregnant, this will be a good opportunity to begin planning for optimal pregnancy. If the visit is a pregnancy "scare"—the patient is not pregnant and does not want to become pregnant—this is an ideal time for her to learn about and to initiate effective contraception.

Instructions for Optimal Pregnancy

1. Think about medical risk factors (your own, your partner's, and both your families) that may affect pregnancy. You may want to talk to a physician if either family has hereditary problems such as sickle cell anemia or Tay-Sachs disease. If you have any serious medical condition or take medication for any reason, talk to your health provider before you become pregnant. Your medications may need to be changed to avoid problems in pregnancy, and you will want to be sure any medical conditions you have are under control. This is especially important for problems like diabetes or tuberculosis.
2. Be sure your diet is as good as it can be, and take a daily vitamin supplement if possible. Ideally, start several months before you become pregnant. Pregnancy can deplete important vitamins and minerals like iron and calcium, so you will need to be sure to get plenty of good nutrition. The vitamin folic acid, 0.4 mg daily, is specifically recommended to reduce the chance of spinal defects in your baby.

3. Avoid exposure to potentially toxic agents. Do not drink alcohol, do not smoke, and do not use any illegal drugs. Avoid excessive caffeine, and avoid x-rays of the abdominal area.
4. Try to avoid being exposed to a sexually transmitted infection. Avoid intercourse or use condoms if you have any chance at all of being exposed to a sexually transmitted infection. Infections such as herpes, gonorrhea, chlamydia, or syphilis can cause serious or deadly complications in your baby.
5. Try to avoid being exposed to contagious illnesses. Fever can cause problems in pregnancy; try to avoid contact with people with contagious diseases, such as influenza.
6. Avoid contact with animal feces. Toxoplasma infection is transmitted through cat feces, and other animals carry infectious organisms as well. Do not handle feces during pregnancy. If possible, wear gloves when working with soil, and afterward wash your hands with soap and clean water.
7. See your health provider as soon as possible if you think you may be pregnant. Having your first pregnancy exam early will help in getting accurate dates for your pregnancy. If possible, schedule your exam within 2 weeks after missing your period.
8. Watch for the danger signs of possible pregnancy problems. Signs of pregnancy problems like ectopic pregnancy (which is also called tubal pregnancy) and miscarriage are likely to occur during the first month or two of pregnancy. Remember the danger signs and contact your health provider right away.

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